

LISTING OF THE CLAIMS

1. (Previously Presented) A composition comprising an immunostimulatory nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1, wherein the immunostimulatory nucleic acid molecule comprises an unmethylated CpG motif.
2. (Original) The composition of claim 1, wherein the immunostimulatory nucleic acid molecule consists of the nucleotide sequence of SEQ ID NO:1.
3. (Original) The composition of claim 1, further comprising an antigen.
4. (Original) The composition of claim 3, wherein the antigen is selected from the group consisting of a microbial antigen, a cancer antigen, and an allergen.
5. (Original) The composition of claim 4, wherein the microbial antigen is selected from the group consisting of a bacterial antigen, a viral antigen, a fungal antigen and a parasitic antigen.
6. (Original) The composition of claim 3, wherein the antigen is encoded by a nucleic acid vector.
7. (Previously Presented) The composition of claim 6, wherein the nucleic acid vector is separate from the immunostimulatory nucleic acid.
8. (Original) The composition of claim 3, wherein the antigen is a peptide antigen.
9. (Original) The composition of claim 1, further comprising an adjuvant.
10. (Original and Withdrawn) The composition of claim 9, wherein the adjuvant is a mucosal adjuvant.

11. (Original and Withdrawn) The composition of claim 1, further comprising a cytokine.

12. (Original and Withdrawn) The composition of claim 1, further comprising a therapeutic agent selected from the group consisting of an anti-microbial agent, an anti-cancer agent, an allergy/asthma medicament.

13. (Original and Withdrawn) The composition of claim 12, wherein the anti-microbial agent is selected from the group consisting of an anti-bacterial agent, an anti-viral agent, an anti-fungal agent, and an anti-parasite agent.

14. (Original and Withdrawn) The composition of claim 12, wherein the anti-cancer agent is selected from the group consisting of a chemotherapeutic agent, a cancer vaccine, and an immunotherapeutic agent.

15. (Original and Withdrawn) The composition of claim 12, wherein the allergy/asthma medicament is selected from the group consisting of PDE-4 inhibitor, bronchodilator/beta-2 agonist, K⁺ channel opener, VLA-4 antagonist, neurokin antagonist, TXA2 synthesis inhibitor, xanthanine, arachidonic acid antagonist, 5 lipoxygenase inhibitor, thromboxin A2 receptor antagonist, thromboxane A2 antagonist, inhibitor of 5-lipox activation protein, and protease inhibitor.

16. (Previously Presented) The composition of claim 1, wherein the immunostimulatory nucleic acid has a nucleotide backbone which includes at least one backbone modification.

17. (Previously Presented) The composition of claim 16, wherein the backbone modification is a phosphorothioate modification.

18. (Previously Presented) The composition of claim 16, wherein the nucleotide backbone is chimeric.

19. (Previously Presented) The composition of claim 16, wherein the nucleotide backbone is entirely modified.

20. (Previously Presented) The composition of claim 1, further comprising a pharmaceutically acceptable carrier.

21. (Canceled)

22. (Previously Presented) The composition of claim 1, wherein the immunostimulatory nucleic acid includes at least four unmethylated CpG motifs.

23-26. (Canceled)

27. (Previously Presented) The composition of claim 1, wherein the immunostimulatory nucleic acid is formulated as a nutritional supplement.

28. (Previously Presented) The composition of claim 27, wherein the nutritional supplement is formulated as a capsule, a pill, or a sublingual tablet.

29. (Previously Presented and Withdrawn) The composition of claim 1, wherein the immunostimulatory nucleic acid is formulated for local administration.

30. (Previously Presented) The composition of claim 1, wherein the immunostimulatory nucleic acid is formulated for parenteral administration.

31. (Previously Presented) The composition of claim 1, wherein the immunostimulatory nucleic acid is formulated in a sustained release device.

32. (Previously Presented and Withdrawn) The composition of claim 1, wherein the immunostimulatory nucleic acid is formulated for delivery to a mucosal surface.

33-42. (Canceled)

43. (Previously Presented) The composition of claim 31, wherein the sustained release device is a microparticle.

44. (Canceled)

45. (Previously Presented and Withdrawn) A method for stimulating an immune response in a subject in need thereof comprising

administering to a subject an immunostimulatory nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1, in an amount effective to stimulate an immune response.

46. (Previously Presented and Withdrawn) The method of claim 45, wherein the subject has or is at risk of developing an infection.

47. (Previously Presented and Withdrawn) The method of claim 46, wherein the infection is selected from the group consisting of a bacterial infection, a viral infection, a fungal infection, and a parasite infection.

48. (Previously Presented and Withdrawn) The method of claim 47, wherein the viral infection is selected from the group consisting of Human immunodeficiency viruses (HIV-1 and HIV-2), Human T lymphotropic virus type I (HTLV-I), Human T lymphotrophic virus type II (HTLV-II), Herpes simplex virus type I (HSV-1) Herpes simplex virus type 2 (HSV-2), Human papilloma virus (multiple types), Hepatitis A virus, Hepatitis B virus, Hepatitis C and D viruses, Epstein-Barr virus (EBV), Cytomegalovirus and Molluscum contagiosum virus.

49. (Previously Presented and Withdrawn) The method of claim 48, wherein the viral infection is a herpes simplex virus infection.

50. (Previously Presented and Withdrawn) The method of claim 45, wherein the subject has or is at risk of developing allergy.

51. (Previously Presented and Withdrawn) The method of claim 45, wherein the subject has or is at risk of developing asthma.

52. (Previously Presented and Withdrawn) The method of claim 45, wherein the subject has or is at risk of developing a cancer.

53. (Previously Presented and Withdrawn) The method of claim 45, further comprising administering an antigen to the subject.

54. (Previously Presented and Withdrawn) The method of claim 53, wherein the antigen is selected from the group consisting of a microbial antigen, a cancer antigen, a self antigen, and an allergen.

55. (Previously Presented and Withdrawn) The method of claim 54, wherein the microbial antigen is selected from the group consisting of a bacterial antigen, a viral antigen, a fungal antigen, and a parasitic antigen.

56. (Previously Presented and Withdrawn) The method of claim 55, wherein the antigen is derived from a microorganism selected from the group consisting of herpesviridae, retroviridae, orthomyroviridae, toxoplasma, haemophilus, campylobacter, clostridium, E.coli, and staphylococcus.

57. (Previously Presented and Withdrawn) The method of claim 45, wherein the immune response is an antigen-specific immune response.

58-62. (Canceled)

63. (Previously Presented and Withdrawn) The method of claim 45, further comprising administering to the subject a second therapeutic agent.

64. (Previously Presented and Withdrawn) The method of claim 63, wherein the second therapeutic agent is an anti-microbial agent.

65. (Previously Presented and Withdrawn) The method of claim 64, wherein the anti-microbial agent is selected from the group consisting of an anti-bacterial agent, an anti-viral agent, an anti-fungal agent, and an anti-parasite agent.

66-69. (Canceled)

70. (Previously Presented and Withdrawn) The method of claim 45, wherein the immunostimulatory nucleic acid has a nucleotide backbone which includes at least one backbone modification.

71. (Previously Presented and Withdrawn) The method of claim 70, wherein the backbone modification is a phosphorothioate modification.

72. (Previously Presented and Withdrawn) The method of claim 70, wherein the nucleotide backbone is chimeric.

73. (Previously Presented and Withdrawn) The method of claim 70, wherein the nucleotide backbone is entirely modified.

74-75. (Canceled)

76. (Previously Presented and Withdrawn) The method of claim 45, wherein the immunostimulatory nucleic acid is administered orally.

77. (Previously Presented and Withdrawn) The method of claim 45, wherein the immunostimulatory nucleic acid is administered locally.

78. (Previously Presented and Withdrawn) The method of claim 45, wherein the immunostimulatory nucleic acid is administered parenterally.

79. (Previously Presented and Withdrawn) The method of claim 45, wherein the immunostimulatory nucleic acid is administered in a sustained release device.

80. (Previously Presented and Withdrawn) The method of claim 45, wherein the immunostimulatory nucleic acid is administered to a mucosal surface.

81-82. (Canceled)

83. (Previously Presented and Withdrawn) The method of claim 80, wherein the mucosal surface is selected from the group consisting of an oral, nasal, rectal, vaginal, and ocular surface.

84. (Previously Presented and Withdrawn) The method of claim 45, further comprising isolating an immune cell from the subject, contacting the immune cell with an effective amount to activate the immune cell of the immunostimulatory nucleic acid and re-administering the activated immune cell to the subject.

85-87. (Canceled)

88. (Previously Presented and Withdrawn) The method of claim 45, wherein the subject is a human.

89. (Previously Presented and Withdrawn) The method of claim 45, wherein the subject is selected from the group consisting of a dog, cat, horse, cow, pig, sheep, goat, chicken, monkey and fish.

90-93. (Canceled)

94. (Previously Presented and Withdrawn) The method of claim 52, wherein the cancer is selected from the group consisting of biliary tract cancer; bone cancer; brain and CNS cancer; breast cancer; cervical cancer; choriocarcinoma; colon cancer; connective tissue cancer; endometrial cancer; esophageal cancer; eye cancer; gastric cancer; Hodgkin's lymphoma; intraepithelial neoplasms; larynx cancer; lymphomas; liver cancer; lung cancer (e.g. small cell and non-small cell); melanoma; neuroblastomas; oral cavity cancer; ovarian cancer; pancreas cancer; prostate cancer; rectal cancer; sarcomas; skin cancer; testicular cancer; thyroid cancer; and renal cancer.

95. (Previously Presented and Withdrawn) The method of claim 45, further comprising administering an antibody specific for a cell surface antigen, and wherein the immune response results in antigen dependent cellular cytotoxicity (ADCC).

96. (Canceled)

97. (Previously Presented and Withdrawn) A method for inducing an innate immune response, comprising

administering to the subject an immunostimulatory nucleic acid in an amount effective for activating an innate immune response, wherein the immunostimulatory nucleic acid has a nucleotide sequence comprising SEQ ID NO:1.

98. (Previously Presented and Withdrawn) A method for identifying an immunostimulatory nucleic acid comprising

measuring a control level of activation of an immune cell population contacted with an immunostimulatory nucleic acid comprising a nucleotide sequence of SEQ ID NO:1,

measuring a test level of activation of an immune cell population contacted with a test nucleic acid, and

comparing the control level of activation to the test level of activation,
wherein a test level that is equal to or above the control level is indicative of an immunostimulatory nucleic acid.